From:	Guerry, William M.
To:	HertzWu, Sara
Cc:	Mike Major; Hensley, Dave; Terriquez, Joe; Queiroz, Gustavo; "Ted Sommer"; Rob Ernest (RErnest@bigoxenergy.com); Bill Tyndall
Subject:	BOE Proposed Repair Plans and Safety Procedures
Date:	Monday, October 22, 2018 2:42:06 PM
Attachments:	181019_Big Ox Expansion Joint Repair Plan and Detail.pdf 181022_Draft Tube Removal Procedure.pdf Roof Access Program.docx Rigging Inspection.docx SSC-SAFE-SOP-140-056-SelfContainedBreathingAppInspect.doc SSC-SAFE-SOP-140-057-SuppliedAirRespiratorInspect.docx SSC-SAFE-SOP-140-012-CraneInspection.doc SSC-SAFE-SOP-140-016-RiggingInspections.docx SSC.SAFE.POL.140-012.H2S.pdf SSC.SAFE.POL.140-014.HoistingAndRigging.pdf SSC.SAFE.POL.140-024.RespiratoryProtection.pdf SSC.SAFE.POL.140-029.WorkingNearBiogasEquipment.pdf

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Sara,

On our call today at 3:00 Central, BOE looks forward to briefing you and the EPA team—and answering any questions—on the proposed Repair Plan for the ADs and related actions undertaken to implement paragraph 65-a.1 and a.8 of the AOC.

BOE has been working over the last month with the national design/build firm, Miron, to develop solutions to correct the sealing and cracking concerns, including the repairs to the expansion joint and Mixer #2. Miron was the primary BOE contractor that built most of the existing BOE plant, including the interrelated AD systems, which are being repaired. BOE and Miron are also working closely with a team from McMahon Engineering who was the original Architect and Structural Engineer on the project. Accordingly, Miron and McMahon Engineering have a unique expertise and knowledge of the BOE process and these related repairs. Without such a pre-existing knowledge of the BOE plant, it would be difficult for any new entity to come in and develop and implement solutions—given the very tight time frame set forth in the AOC and the complex nature of these systems and repairs.

Miron's team is currently on-site at BOE, along with Miron's subcontractor AK Services, who will conduct the required water jet cutting. Miron plans this week to implement the sealing of Mixer 2 in Anaerobic Digester 1 (AD1). (see 181022_Draft Tube Removal Procedure.pdf for more detail).

Miron and BOE also have developed the enclosed proposed roof repair/sealing protocol to repair the expansion joint and other related concerns with leaks from the roof. (See 181019_Big Ox Expansion Joint Repair Plan and Detail.pdf). Miron and the BOE team are trained and well-informed to ensure that they carefully implement all of BOE's well-established employee-safety standards and practices, which are also attached.

Miron and BOE propose to correct the AD1 Mixer 2 leaks this week according to the work plan below:

a) 22 October 2018
   i. Mobilize to site
   ii. Conduct Job Hazard Analysis

iii. Set up / test supplied air equipment (by BOE) and PPE.

b) 23 October 2018
   i. Cut roof openings for jacking beam support posts.
      1) Field fabricate/install support posts.
   ii. Mobilize crane and install jacking support beams.
   iii. Draw down Digester 1 pressure to 1" w.c, remove existing "dome" over mixer #2.
   iv. Verify rigging requirements (Miron).
   v. Re-install dome.

c) 24 October 2018 - Stage hydraulic jacks
   i. Locate jacking frame, required rigging, draft tube clamp ring, neoprene "skirt", and blind flanges for the draft mixer port and embedded draft tube port.
   ii. Mobilize abrasive cutting equipment
      1) BOE to provide 12 GPM water supply to work area.

d) 25 October 2018
   i. Draw down Digester 1 pressure to 1" w.c and remove existing "dome" over mixer #2 (by BOE).
   ii. Rig jacking frame to existing draft tube and break draft tube free from what is left of existing support.
   iii. Release draft tube from jacking frame, remove jacking frame from the work area via crane, install mixer port blind flange on the draft tube
   iv. Inject inert gas into interior of draft tube.
   v. Rig crane to existing draft tube and slowly withdraw from digester. Three possible scenarios:
      1) If possible to remove draft tube without binding of draft tube support legs in the embedded port, proceed to remove draft tube mixer and install gasket and blind flange on the embedded port.
      2) If legs bind in the embedded port but can be unbolted from the top, remove bolts, allow legs to drop free, remove draft tube mixer and install gasket and blind flange on the embedded port.
      3) If legs bind in the embedded port and cannot be removed from the top, install the draft tube clamp ring and "skirt" as low on the draft tube as possible. Lower the draft tube back onto the existing embedded port to seal off as much biogas as possible. Install abrasive jet cutting equipment to cut draft tube. Provide fresh air blower directly to the abrasive cutting area such that fresh air supply follows the cutting apparatus.
   vi. Upon completion of the cut, the lower portion will fall into Digester 1. Raise the upper portion of the draft tube such that the gasket and blind flange can be installed on the embedded port. Lay down the remaining portion of the draft tube and remove the abrasive cutting apparatus.

e) 26 October 2018 –
   i. Remove jacking beams and equipment from Digester 1 roof. Demobilize crane, water jet cutting and Miron.

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We look forward to our call and to further working with EPA to implement the enclosed improvements and repair plans.

Best,

Bill Guerry